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PROFESSOR B. P. APAROV

(On his 50th Birthday and 25th Year of Scientific and Pedagogical Activity)

V. V. Meshkov, G. N. Petrov,
M. A. Babikov, A. N. Larionov, Ye. V. Nitsov

Boris Petrovich Aparov was born in 1899. After finishing intermediate school, he entered Moscow Higher Technical School in 1917, and graduated from the Electrical Engineering Faculty in 1923. He began his scientific and pedagogical activity in 1924, in the Chair of Electric Machines under the leadership of K. I. Shenfer, and in the Chair of Fundamentals of Electrical Engineering under the leadership of K. A. Krug. He then began to work as scientific collaborator in the State Electrical Engineering Experimental Institute (GEEI; now VEI).

In 1928, Aparov received the title of Docent, and in 1934 the title of Professor of the Moscow Power Engineering Institute imeni Molotov (MEI).

In 1937, after successfully defending this dissertation, Aparov was awarded the scientific degree of Doctor of Technical Sciences. Up to 1941, Aparov was working in the Chair of Electric Machines of MEI. During the war he was appointed head of the Chair of Aviation and Auto Tractor Electrical Equipment, and has this post up to the present.

Aparov has written over 50 scientific articles and monographs. His scientific work has involved both theoretical problems and practical research. One of the first problems he studied was the expression for the equation of a hysteresis loop with the help of a Fourier series (Izvestiya GEEI, 1925). In 1924, Aparov printed the results of the first experiments he conducted on the effect of stator and rotor serrations on the working processes in induction machines, and in particular, on the curve of their moments (torques). These articles first proved the unsoundness of the views of the Arnold school, according to which the basic factor in these processes was the so-called "winding harmonics," and developed the concept of the decisive importance of the influence of the so-called "tooth (slot) harmonics." In the years which followed, this view received general recognition.

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In 1932, Aparov returned to this problem and proposed formulas for the rational selection of slots for induction motors. He also worked out rules for selecting the slots for noiseless induction motors. Many of Aparov's works are devoted to individual problems on the theory of induction motors, particularly on the influence of saturation on the operating properties of the motor.

In the field of dc machines, Aparov, in collaboration with Academician K. I. Shenfer, worked on the problem of improving commutation by using sectionalized brushes.

Aparov was the first to indicate the possibility of cascade connection of synchronous machines and showed that the cascade operates quite stably.

In developing double-fed machines, operating near the ordinary synchronous speed, proposed by V. A. Tolvinskiy, Aparov suggested a scheme for a double-fed motor in which pulsation (heating) of the current in the supply leads was avoided. Tolvinskiy's scheme, as well as Aparov's as proposed considerably earlier than similar research in the USA.

Since 1930, Aparov has been in charge of the Laboratory of AC Machines in VEI (All-Union Electrical Engineering Institute), and has worked in close contact with the plants of the electrical industry. Under his leadership, this laboratory has carried out very valuable investigations on heating and ventilation of electric machines, particularly turbogenerators.

Aparov has written the first volume of the work, AC Machines, and has prepared for printing the book Fundamentals of Aviation and Aircraft Electrical Engineering.

During the years of his scientific and pedagogical activity, Aparov has educated a considerable number of scientific workers.

For his scientific and pedagogical activity, Aparov was awarded the Order of the Badge of Honor and medals of the USSR.

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